

## IN THE CLAIMS

1. (Currently Amended) An acoustic diaphragm having a dynamic response extending throughout the audible range, comprising a rigid plate-like shaped member supported upon, ~~and pivotal about, a stiffened edge of a side thereof which pivots on torsional springs,~~ said rigid plate-like shaped member having torsional and translational stiffeners.

2. (Currently Amended) The acoustic diaphragm in accordance with claim 1, wherein said torsional and translational stiffeners comprise cross members traversing said rigid plate-shaped structure.

3. (Currently Amended) The acoustic diaphragm in accordance with claim 1, wherein the stiffened edge of the side that supports the diaphragm comprises a “T”-shaped cross section whose length and cross-section ~~can be varied~~ are adapted to tune said acoustic diaphragm ~~so that its lowest~~ for a resonant frequency is higher than the audible range.

4. (Currently Amended) The acoustic diaphragm in accordance with claim 1, wherein said rigid plate-like shaped member is fabricated of polycrystalline silicon ~~or similar materials.~~

5. (Currently Amended) The acoustic diaphragm in accordance with claim 1, wherein said rigid plate-like shaped member comprises a substantially flat shape.

6. (Currently Amended) The acoustic diaphragm in accordance with claim 1, wherein said rigid plate-like shaped member comprises a ~~substantially box-like shape~~ substantially corresponding to a box.

7. (Currently Amended) The acoustic diaphragm in accordance with claim 1, wherein said rigid plate-like shaped member is approximately 2 microns thick.

8. (Currently Amended) The acoustic diaphragm in accordance with claim 1, wherein said torsional and translational stiffeners ~~are~~ comprise cross rectangular members extending from a flat surface of the rigid plate-like structure which are approximately 4 microns thick and 40 microns tall.

9. (Original) The acoustic diaphragm in accordance with claim 1, having a first resonance frequency of approximately 24 kHz.

10. (Original) The acoustic diaphragm in accordance with claim 1, having a second resonance frequency of approximately 84 kHz.

11. (Currently Amended) An acoustic diaphragm having a robust dynamic response extending throughout ~~beyond~~ an audible range, comprising a rigid plate-like ~~shaped~~ member supported upon, ~~and pivotal about,~~ a “T”-~~shaped cross~~ section disposed on a side thereof which is pivotally suspended by torsional springs, said rigid plate-like ~~shaped~~ member having torsional and translational crossbar stiffeners ~~to provide a robust dynamic response extending throughout the audible range.~~

12. (Currently Amended) The acoustic diaphragm in accordance with claim 11, wherein said rigid plate-like ~~shaped~~ member is fabricated of polycrystalline silicon ~~or similar materials.~~

13. (Currently Amended) The acoustic diaphragm in accordance with claim 11, wherein said rigid plate-like ~~shaped~~ member comprises a substantially flat shape.

14. (Currently Amended) The acoustic diaphragm in accordance with claim 11, wherein said rigid plate-like ~~shaped~~ member comprises a ~~substantially box-like shape~~ substantially corresponding to a box.

15. (Currently Amended) The acoustic diaphragm in accordance with claim 11, wherein said plate-like shaped member is approximately 2 microns thick.

16. (Currently Amended) The acoustic diaphragm in accordance with claim 11, wherein said torsional and translational stiffeners ~~are~~ comprise rectangular structures approximately 4 microns thick and 40 microns tall extending from a flat surface of said plate-shaped member.

17. (Original) The acoustic diaphragm in accordance with claim 11, having a first frequency mode of approximately 24 kHz.

18. (Original) The acoustic diaphragm in accordance with claim 11, having a second frequency mode of approximately 84 kHz.

19. (Currently Amended) An acoustic diaphragm having a dynamic response extending throughout the audible range, comprising a ~~rigid~~ plate-like shaped member cantilevered about one side thereof from a stiff edge, said stiff edge being pivotally supported by torsional springs, said ~~rigid~~ plate-like shaped member having torsional and translational stiffeners to provide a robust dynamic response to acoustic waves by displacement about said torsional springs extending throughout the audible range, having a dynamic response dominated by a single mode of vibration outside of the audible range.

20. (Currently Amended) The acoustic diaphragm in accordance with claim 19, wherein said torsional and translational stiffeners comprise continuous cross members.

21. (Currently Amended) The acoustic diaphragm in accordance with claim 19, wherein the ~~side that is cantilevered~~ stiff edge comprises a “T”-shaped cross section whose length and cross-section ~~can be varied~~ are adapted to tune said acoustic diaphragm for a resonant frequency so that its lowest resonant frequency is higher than the audible range.

22. (Currently Amended) The acoustic diaphragm in accordance with claim 19, wherein said rigid plate-like shaped member is fabricated of polycrystalline silicon or similar material.

23. (Currently Amended) The acoustic diaphragm in accordance with claim 19, wherein said rigid plate-like shaped member comprises a substantially flat shape.

24. (Currently Amended) The acoustic diaphragm in accordance with claim 19, wherein said rigid plate-like shaped member comprises a ~~substantially box-like~~ substantially corresponding to a box.

25. (Currently Amended) The acoustic diaphragm in accordance with claim 19, wherein said plate-like shaped member is approximately 2 microns thick.

26. (Currently Amended) The acoustic diaphragm in accordance with claim ~~25~~ 49, wherein said torsional and translational stiffeners ~~are~~ comprise rectangular structures approximately 4 microns thick and 40 microns tall extending from a flat surface of said plate-shaped member.

27. (Currently Amended) The acoustic diaphragm in accordance with claim ~~26~~ 49, having wherein said dominating single mode of vibration outside of the audible range comprises a first frequency mode of approximately 24 kHz.

28. (Original) The acoustic diaphragm in accordance with claim ~~27~~ 49, having a second frequency mode of approximately 84 kHz.